Mill Creek Middle School

Course Name: Algebra

Grade Level: 8th Grade

Teacher Name: Melanie Dever

Teacher Contact Information:

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Team website: http://devergrantteam.weebly.com

Team Conference Period: 8:15-9:25 am

Course Description:
Algebra emphasizes problem solving, critical thinking, communication, connections among mathematical topics, and connections between math and other subject areas. We'll use multiple representations to help solidify complex ideas, and explore the applications of our learning beyond the classroom. We'll do activities and projects to practice the use of our math skills, and will often work in pairs or groups.

Course Goals and Topics:
Our learning this year will be guided by the High School Algebra standards as described in the Common Core State Standards. These standards collective describe what students should understand and be able to do after completing both the Algebra 1 and Algebra 2 high school courses. The content is grouped into four broad strands:

Seeing Structure in Expressions
- Interpret the structure of expressions
- Write expressions in equivalent forms to solve problems

Arithmetic with Polynomials and Rational Functions
- Perform arithmetic operations on polynomials
- Understand the relationship between zeros and factors of polynomials
- Use polynomial identities to solve problems
- Rewrite rational functions

Creating Equations
- Create equations that describe numbers or relationships

Reasoning with Equations and Inequalities
- Understand solving equations as a process of reasoning and explain the reasoning
- Solve equations and inequalities in one variable
- Solve systems of equations
- Represent and solve equations and inequalities graphically

In addition to describing the content students will master, the Common Core State Standards also describe five general Mathematical Processes. These describe how students approach math, and they remain the same at all grade levels. The mathematical practices are: Make sense of problems and persevere in solving them; Reason abstractly and quantitatively; Construct viable arguments and critique the reasoning of others; Model with mathematics; Use appropriate tools strategically; Attend to precision; Look for and make use of structure; Look for and express regularity in repeated reasoning.

Textbook and Website:
McDougal Littell. Algebra 1. 2007
Textbook Website: http://www.classzone.com/cz/index.htm

Materials:
Required Math Supplies: A 3-ring binder with lined and graph paper, divider tabs, and pencils.
Optional Math Supplies: TI-83+ or TI-84+ graphing calculator (strongly recommended) or a graphing calculator app. on an iPod or app. phone. Note: Students will not be allowed to use iPod or phone based calculators on tests and exams. Several TI-84 calculators will be available to borrow during assessments when needed. TI-89 calculators are *not* recommended, and will not be allowed on assessments.

Grading System and Criteria for Evaluation:
Please see the Dever-Grant Team Policies document for a detailed explanation of Mill Creek's grading system.

Guide to Resources/Tools for Student Success:
Mill Creek Math Department Website:
https://sites.google.com/a/dexterschools.org/mcmath/home
Common Core State Standards - High School Algebra:
http://www.corestandards.org/the-standards/mathematics/high-school-algebra/introduction/
Online Course Specific Resources in Moodle:
http://moodle.dexterschools.org

"Flipped" Instruction:
Portions of the Algebra 1 course are taught using "flipped" instruction. In a "flipped" course, students learn the lesson and take notes on content at home using lessons we have created specifically for our classes. During class time, students work on practice problems that would have been homework in a traditional setting. We've found this type of instruction works very well for students and parents. Kids can pause and rewind lessons as they take notes at home, and can get help from peers and teachers while working on tough problems at school. Students who do not have reliable internet access at home will need to see their teacher to get DVDs of the narrated lessons.

Textbook Website:
ONLINE TEXTBOOK, TUTORIALS & GAMES!
McDougall-Littell provides a fabulous website (http://www.classzone.com/cz/index.htm) as a resource for students and parents. This website offers:

- step-by-step verbal tutorials for each section in the textbook. If a student needs a refresher course after hearing the explanation in school, he/she can listen to the tutorial online at home. Also, if a student is home sick from school, he/she will still be able to access a tutorial for the math topics taught in class that day.
- an online version of the textbook itself. This is an exact replica of our entire textbook. Students with reliable internet access may use this as a way to access the book without carrying it back and forth to school each day.
- flashcards and many extra practice problems (with answers) for students and/or parents.
- interactive games and activities linked to each chapter of the textbook.
- practice assessments.